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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/336,090	06/18/1999	FRANK KASTENHOLZ	AGM-006	7246

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HARRITY & SNYDER, LLP
11240 WAPLES MILL ROAD
SUITE 300
FAIRFAX, VA 22030

EXAMINER

LY, ANH VU H

ART UNIT PAPER NUMBER

2667

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/336,090

Applicant(s)

KASTENHOLZ ET AL.

Examiner

Anh-Vu H Ly

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-16, 18-20 and 22-26 is/are rejected.
- 7) ☒ Claim(s) 12 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This communication is in response to applicant's amendment filed July 07, 2004. Claims 1-26 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 13-16, 18-20, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al (US Patent No. 5,740,156). Hereinafter, referred to as Tanabe.

With respect to claims 1, 20, and 22-26, Tanabe discloses in Fig. 1, a self-routing packet switching system includes plurality of line interfaces 7 (a plurality of local line card modules) for performing line termination. Herein, line interfaces 7 receive and process packets according to different bit rates such as CBR, VBR, UBR, etc... (quality of service means for differentiating between information coupled into local I/O channels based on an associated priority of information). Tanabe does not disclose that information formatted according to a plurality of protocols. However, IP/ATM networks are well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a conversion module for converting data according to different formats in Tanabe's system, to take advantage of high bandwidth and QoS supplied by the ATM layer and support the idea of a homogeneous ATM network. Tanabe discloses in Fig. 1, the self-routing packet switching

Art Unit: 2667

system further includes plurality of self-routing switches 3 (a selectable number of local interconnect modules connected to the local line card modules) for switching a packet through self-routing operation. Further, as illustrated in Fig. 1, self-routing switches 3 of the local units 1 connected to plurality of line interfaces 7 via packet circuits 10-1 to 10-n (local I/O channels) and connected to plurality of self-routing switches 4 of the tandem unit 2 via packet circuits 9-1 to 9-q (non-local I/O channels) (each including local transfer elements for transferring information between a plurality of local I/O channels and for transferring information between plurality of local I/O channels and plurality of non-local I/O channels). Herein, the self-routing switches are adjacently distributed (located proximate to each other). Tanabe discloses in Fig. 1, a tandem unit 2 (an expanded interconnect module located proximate to local interconnect modules) includes plurality of self-routing switches 4 and connects to local units 1 via packet circuits 9-1 to 9-q (coupling means for electrically coupling to non-local I/O channels) for transferring the processed packets (an expanded transfer elements for transferring information between local interconnect modules). Further, as illustrated in Fig. 1, self-routing switches 4 of the tandem unit 2 can communicate with one of the self-routing switches 3 of a local unit or all of the self-routing switches 3 of all local units simultaneously (wherein selected number of local interconnect can be varied while expanded interconnect is transferring information).

With respect to claim 2, Tanabe discloses in Fig. 1, that each local unit includes a central controller for managing call processing control and call resource (local transfer elements include means for synchronizing information transferred between each of local transfer elements).

Art Unit: 2667

With respect to claims 3 and 19, Tanabe discloses in Fig. 18, each of the tandem unit includes a central controller 253 for managing call processing control and call resource (expanded transfer elements include means for synchronizing information transferred between local interconnect modules).

With respect to claim 4, Tanabe discloses in Fig. 1, a packet switching system having self-routing switches. Tanabe does not disclose hot-swap means for changing selected number of local interconnect modules included in interconnect network while interconnect network is transferring information. However, hot-swap means for replacing a number of switches while continuously transferring information on other switches are well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include hot-swap means in Tanabe's system, to replace fault switches.

With respect to claims 5 and 9, Tanabe discloses in Fig. 1, a self-routing packet switching system includes plurality of line interfaces, self-routing switches of the local units, and self-routing switches 4 of the tandem unit. Herein, the system receives and processes packets according to different bit rates such as CBR, VBR, UBR, etc... It is known in ATM switching network that CBR is given higher preference than other bit rates since it carrying voice traffic (local I/O channels have an associated priority and interconnect network comprises QoS means for transferring information from one of local I/O channels having a relatively higher priority in preference to transferring information from one of local I/O channels having a relatively lower priority).

With respect to claims 6-9, Tanabe discloses in Fig. 1, a self-routing packet switching system for routing data packets. This means that the system includes buffers or queues for storing received data packets from its input ports and further it is known that buffers or queues are associated with certain thresholds for congestion control (local I/O channels have an associated availability for receiving information and interconnect network comprises means for maintaining a status indicative of associated availability for one of more local I/O channels). Tanabe does not disclose back pressure means for communicating indicated status out of local I/O channels. However, back pressure mechanisms are well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include back pressure mechanisms in Tanabe's system, to control network congestions.

With respect to claim 10, Tanabe discloses in Figs. 6A-C, the structures of the packet formats which include the header field and user field. The header field contains a VCI area and VPI area (wherein information transferred through interconnect modules includes a data portion and a destination address portion; destination address portion specifying through which one of local I/O channels the information is to be transferred out of the interconnect network). Tanabe does not disclose back pressure means is adapted for replacing destination address portion with status for communicating status out of interconnect network. However, back pressure mechanisms are well known in the art in which the information in the header field is replaced with congestion status. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include back pressure mechanisms in Tanabe's system, to control network congestions.

With respect to claim 11, Tanabe discloses in Fig. 1, a self-routing packet switching system for routing data packets. Tanabe does not disclose redundancy generating means for generating an alternative version of information being transferred out of the interconnect network through local I/O channels. However, it is known in the art that in multicasting or broadcasting network, information received is duplicated for transferring to multiple destinations. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include duplicative means for duplicating information in Tanabe's system, to transfer information to multiple destinations simultaneously.

With respect to claims 13 and 15, Tanabe discloses in Fig. 1, a self-routing packet switching system for routing ATM cells simultaneously among the self-routing switches 3 and self-routing switches 4 (wherein interconnect network is adapted for transferring information as information cells, and said local transfer elements include means for substantially simultaneously transferring a plurality of information cells out of the local interconnect modules).

With respect to claims 14, 16, and 22, Tanabe discloses in Fig. 1, a self-routing packet switching system for routing data packets. This means that the system includes buffers or queues for storing received data packets from its input ports and further it is known that buffers or queues are associated with certain thresholds for congestion control and for scheduling purpose (a memory queue for intermediately storing plurality of information cells to be transferred, and queue detection means for detecting when a selected number of information cells are stored in memory queue, wherein local transfer elements are adapted for transferring plurality of

Art Unit: 2667

information cells in response to queue detection means detecting storing of selected number of information cells).

With respect to claim 18, Tanabe discloses in Fig. 1 that the self-routing switches 3 are self-routing switches 4 are identical (wherein local transfer elements and expanded transfer elements are substantially identical).

Allowable Subject Matter

3. Claims 12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 21 is allowed.

Response to Arguments

4. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ruszczyk (US Patent No. 6,205,150 B1) discloses method of scheduling higher and lower priority data packets.

Shinohara (US Patent No. 6,122,251) discloses switch control circuit and control method of ATM switchboard.

Art Unit: 2667


Shinohara (US Patent No. 6,067,298) discloses ATM switching system which separates services classes and uses a code switching section and back pressure signals.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

avl


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
12/17/04